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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|-------------------|
| 10/775,958 | 02/09/2004 | Kwang-Ho Han | 4591-374 | 1600 |
| 20575 | 7590 | 06/14/2006 | EXAMINER | |
| MARGER JOHNSON & MCCOLLOM, P.C. 210 SW MORRISON STREET, SUITE 400 PORTLAND, OR 97204 | | | | HERRERA, JENNIFER |
| ART UNIT | | PAPER NUMBER | | |
| 3652 | | | | |

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---------------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/775,958 | HAN ET AL. | |
| | Examiner Jennifer P. Herrera | Art Unit 3652 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 February 2004.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) _____ is/are rejected.
 7) Claim(s) 5,7 and 14 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 2/9/2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10/18/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4)

because reference characters:

- a. "462" and "482" have both been used to designate horizontal portion.
- b. "386" and "486" have both been used to designate connection portions.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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Specification

1. The disclosure is objected to because of the following informality: there is no brief description of Figure 9B.

Appropriate correction is required.

Claim Rejections – 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1,3, 11, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - a. Claim 1 recites the limitations:
 - i. "the lift pin assembly" in line 5.
 - ii. "the edge" in line 6.
 - b. Claim 3 recites the limitation "the radius" in line 16.
 - c. Claim 11 recites the limitation "said fabricating" in line 18.

There are insufficient antecedent basis for the limitations in claims 1, 3, and 11.

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d. Claim 14 is indefinite with the movement of the guiding blocks with respect to the lift pins. The guiding blocks move outward when the pins are lowered but the guiding blocks also move inward when the lift pins are being lowered. It is unclear whether the guiding blocks move outward or inward.

Claim Rejections – 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 11–13, 15 and 18, as understood by the examiner, are rejected under 35 U.S.C. 102(a) and 35 U.S.C. 102(e) as being anticipated by Shin et al. (U.S. 6,601,313 B2) (“Shin”).

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a. Regarding claim 1, Shin discloses:

- i. a susceptor, 20, composed of a lift pin assembly, 12, column 4, line 18,
- ii. a plurality of guiding blocks, 22, around the edge of the susceptor in column 4, lines 24–25, and
- iii. a guiding block transfer unit, column 4, lines 36–49.

b. Regarding claim 11, Shin discloses the apparatus previously disclosed to be employed in a baking process during the fabricating of a semiconductor device in column 1, lines 16–19.

c. Regarding claim 12, Shin discloses:

- i. the method to introduce the substrate to lift pins in column 4, line 28,
- ii. the lowering of the lift pins, column 4, lines 18–20, and
- iii. the movable guiding blocks along the edge of the susceptor to position the substrate to a predetermined and aligned position in column 4, lines 24–35.

d. Regarding claim 13, Shin discloses moving guiding blocks when the lift pins are lowered in column 4, lines 36–49.

- e. Regarding claim 15, Shin discloses the step of testing the position of the substrate, column 3, lines 14–22.
- f. Regarding claim 18, Shin discloses the method of manufacturing a semiconductor device by:
 - i. loading the substrate on the susceptor in column 5, lines 43–44,
 - ii. providing a plurality of guiding blocks disposed around the edge of the susceptor in column 4, lines 24–26, and
 - iii. positioning the substrate on the susceptor in column 4, lines 26–35.

Claim Rejections – 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 2–3, 6, 9, 17, and 19–20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Shin in view of Cho et al. (U.S. 6,168,427 B1)(“Cho”).

a. Regarding claims 2, 3, and 19, Shin also discloses a plate, 20, and a spacer, 24. Shin does not disclose guiding lanes. Cho discloses guiding lanes, 44, for the guiding blocks in column 4, lines 1–3 and 10–12. Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to add Cho’s guiding lanes to Shin apparatus, to vary the positions of the guiding blocks. Having the ability to change the distances of the guiding blocks via guiding lanes would expand the function of the apparatus to carry different substrates.

b. Regarding claims 6, 17, and 20, Shin does not disclose a plurality of positions for the guiding blocks, 22. Cho discloses the guiding blocks, 40, moving a plurality of positions in column 4, lines 10–17. It would have been obvious to a person with ordinary skill in the art at the time the invention was made to add plural positions as taught by Cho to Shin’s apparatus, to optimize the mobility of the guiding blocks.

c. Regarding claim 9, Shin does not disclose guiding lanes and the ability to have a plurality of positions for the guiding blocks. Cho discloses the guiding

lanes and plurality of positions in column 4, lines 1–3 and 10–17. Cho does not disclose a testing unit. Shin discloses a testing unit in column 6, lines 60–62. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to add the guiding lanes and plural positions as taught by Cho to Shin's apparatus, to expand the diversity in correcting the position of the substrate. Having the mobility of the guiding blocks with a testing unit increases the function of the apparatus to secure the placement of the substrate.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin in view of Cho as applied to claims 1–3 above, and further in view of Perlov et al. (U.S. 6,393,337 B1)(“Perlov”). Shin as modified by Cho does not disclose a rotatable shaft, 102 & 110, a plurality of supporting rods, 112, and a plurality of transfer rods, 114. Perlov discloses the shaft, supporting rods, and transfer rods in column 3, lines 25–28. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to add Perlov's rotating apparatus to Shin's and Cho's device, to allow movement manipulation within the device to position the substrate.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin in view of Cho in view of Perlov as applied to claim 4 above, and further in view of Horr et

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al. (U.S. Reissued 30,601) ("Horr"). Shin as modified by Cho and Perlov does not disclose a resilient element. Horr discloses a resilient element, 21, in column 3, lines 17-21. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to add Horr's resilient element to Shin's apparatus, to tolerate any given movement by the guiding block.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin in view of Cho as applied to claim 1-3, and 9 above, and further in view of Horr. Shin as modified by Cho does not disclose a vacuum line, vacuum pump, and sensor. Horr discloses the vacuum pump, 28, vacuum line, 27, and sensor, 17, in column 3 lines 28-33 and lines 62-66, and column 4, lines 15-17. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to add a vacuum pump, line and sensor as taught by Horr to Shin's apparatus as the testing unit. Having a vacuum testing unit would allow the user to have an accurate reading of the position of the substrate.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin in view of Horr. Shin does not disclose a vacuum line. Horr discloses a vacuum line in column 3, lines 28-33 and lines 62-68. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to add Horr's vacuum line

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to Shin's apparatus to easily determine the positioning of the substrate. Having a vacuum line test the pressure inside the oven gives the user the opportunity to correct any placement mistakes.

Allowable Subject Matter

9. Claims 5 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claim 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer P. Herrera whose telephone number is (571) 272-6269. The examiner can normally be reached on 0830-1700 hrs Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JPH
5/23/06



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